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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
TORRES, JOSEPH D	

ART UNIT	PAPER NUMBER
2133	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/756,778	GUEGUEN, ARNAUD	
	Examiner	Art Unit	
	Joseph D. Torres	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6,8-11,13-22,24 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,8-11,13-22,24 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on 02/10/2004. These drawings are accepted.

Response to Arguments

2. Applicant's arguments with respect to claims 1-4, 6, 8-11, 13-22, 24 and 25 have been considered but are moot in view of the new ground(s) of rejection.

Specification

3. The disclosure is objected to because of the following informalities: The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The preamble of claim 1 recites, "A method of determining a decoded information quality parameter for a digital data transmission with error-correcting coding comprising". Nowhere does the applicant teach "performing error-correction coding of the digital data: transmitting the digital data with error-correction coding: receiving the digital data with error-correcting coding" as part of a "method of determining a decoded information quality parameter for a digital data transmission with error-correcting coding comprising". Instead, Figure 4 of the Applicant's specification teaches that the "method of determining a decoded information quality parameter for a digital data transmission with error-correcting coding comprising"

is performed entirely within the decoding process at the receiver after receiving digital data, hence, according to the Applicant's own specification, "performing error-correction coding of the digital data: transmitting the digital data with error-correction coding: receiving the digital data with error-correcting coding" cannot be part of the "method of determining a decoded information quality parameter for a digital data transmission with error-correcting coding comprising" as taught in the Applicant's disclosure.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-4, 6, 8-11, 13-22, 24 and 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The preamble of claim 1 recites, "A method of determining a decoded information quality parameter for a digital data transmission with error-correcting coding comprising". Nowhere does the applicant teach "performing error-correction coding of the digital data: transmitting the digital data with error-correction coding: receiving the digital data with error-correcting coding" as part of a "method of determining a decoded information quality parameter for a digital data

transmission with error-correcting coding comprising". Instead, Figure 4 of the Applicant's specification teaches that the "method of determining a decoded information quality parameter for a digital data transmission with error-correcting coding comprising" is performed entirely within the decoding process at the receiver after receiving digital data, hence, according to the Applicant's own specification, "performing error-correction coding of the digital data: transmitting the digital data with error-correction coding: receiving the digital data with error-correcting coding" cannot be part of the "method of determining a decoded information quality parameter for a digital data transmission with error-correcting coding comprising" as taught in the Applicant's disclosure.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-4, 6, 8-11, 13-22, 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the digital data" in lines 4, 5 and 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the received digital data" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claims 1-4, 6, 8-11, 13-22, 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative

relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationships between "turbo decoding" and "a decoded characteristic statistical quantity". The relationship between "turbo decoding" and "a decoded characteristic statistical quantity" is unclear, that is, it is not clear what "a decoded characteristic statistical quantity" has to do with turbo decoding and whether it is used as part of the turbo decoding process or is a by-product of the process. Since none of the claim language recites any turbo decoding steps and only states that turbo decoding is used in the step for determining "a decoded characteristic statistical quantity", it is not clear what tangible relationship the "turbo decoding has with "a decoded characteristic statistical quantity" and how it is used.

The omitted structural cooperative relationships are: the relationships between "turbo decoding" and "a decoded information quality parameter". The relationship between "turbo decoding" and "a decoded information quality parameter" is unclear, that is, it is not clear what "a decoded information quality parameter" has to do with turbo decoding and whether it is used as part of the turbo decoding process or is a by-product of the process. Since none of the claim language recites any turbo decoding steps and only states that turbo decoding is used in the step for determining "a decoded characteristic statistical quantity", it is not clear what tangible relationship the "turbo decoding has with "a decoded information quality parameter" and how it is used.

The omitted structural cooperative relationships are: the relationships between "turbo decoding" and "at least one configuration parameter". The relationship between "turbo

decoding" and "at least one configuration parameter" is unclear, that is, it is not clear what "at least one configuration parameter" has to do with turbo decoding and whether it is used as part of the turbo decoding process or is a by-product of the process. Since none of the claim language recites any turbo decoding steps and only states that turbo decoding is used in the step for determining "a decoded characteristic statistical quantity", it is not clear what tangible relationship the "turbo decoding has with "at least one configuration parameter" and how it is used.

The omitted structural cooperative relationships are: the relationships between "turbo decoding" and "a set of weighted output information". The relationship between "turbo decoding" and "a set of weighted output information" is unclear, that is, it is not clear what "a set of weighted output information" has to do with turbo decoding and whether it is used as part of the turbo decoding process or is a by-product of the process. Since none of the claim language recites any turbo decoding steps and only states that turbo decoding is used in the step for determining "a decoded characteristic statistical quantity", it is not clear what tangible relationship the "turbo decoding has with "a set of weighted output information" and how it is used.

The omitted structural cooperative relationships are: the relationships between "turbo decoding" and "a weighting factor". The relationship between "turbo decoding" and "a weighting factor" is unclear, that is, it is not clear what "a weighting factor" has to do with turbo decoding and whether it is used as part of the turbo decoding process or is a by-product of the process. Since none of the claim language recites any turbo decoding steps and only states that turbo decoding is used in the step for determining "a decoded

characteristic statistical quantity", it is not clear what tangible relationship the "turbo decoding has with "a weighting factor" and how it is used.

The omitted structural cooperative relationships are: the relationships between "a numerical scalar or an integer number" and "a probable number of errors". Probabilistic values are real numbers between 0 and 1. The relationship between "a numerical scalar or an integer number" and any probabilistic value is missing.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-4, 6, 8-11, 13-22, 24 and 25 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility. Since the steps have no tangible connection to turbo decoding, the claims do not provide any useful operation. The claims as written provide steps for producing "a decoded information quality parameter" solely for the sake of producing "a decoded information quality parameter" an have no useful connection to any tangible useful process, machine, manufacture, or composition of matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-4, 6, 8-11, 13-22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moher; Michael I. (US 6161209 A) in view of Wei; Shyue-Win et al. (US 5440570 A, hereafter referred to as Wei).

35 U.S.C. 103(a) rejection of claim 1.

Moher teaches a digital transmission method with error-correcting coding (see Figure 1 and Abstract in Moher), comprising, before a step of transmitting on a channel, a coding procedure for generating, from a source information item, a coded information item comprising at least one redundant information item (col. 3, lines 44-48 in Moher teach that a plurality of digital signals, the K signals in Figure 1 of Moher, are forward error correction encoded; Note: forward error correction is a coding procedure for generating, from a source information item, a coded information item comprising at least one redundant information item) and, after the step of transmitting on the channel, a decoding procedure for obtaining, from a received information item to be decoded an

estimate of the source information item with correction of transmission errors based on the at least one redundant information item (estimated data $b_1,\ldots, b_k$ in Figure 1, 2 and 45 of Moher are an estimate of the source information item $y_1,\ldots, y_k$ in Figure 1 with correction of transmission errors based on the at least one redundant information item), the coding procedure comprising a plurality of elementary coding steps associated with a plurality of interleaving steps performed in parallel or in series (col. 8, lines 25-27 in Moher teach that each of the K digital signals is pseudo-randomly interleaved relative to one another at the transmitter after forward error correction encoding), the decoding procedure being iterative (col. 2, lines 57-60 in Moher teach that the decoding procedure is iterative) and comprising, for each iteration, a plurality of elementary decoding steps which correspond to the said plurality of elementary coding steps (Figures 8 and 45 in Moher teaches a K elementary decoding steps which correspond to the said K of elementary coding steps; Note: each of the K decoders in Figure 45 carry out a decoding step), the elementary decoding steps associated with a plurality of deinterleaving steps corresponding to the interleaving steps (Figure 21 is a typical decoder for each of the decoders in Figure 45 of Moher; Note: each of the decoders is includes a de-interleaver), each of the elementary decoding steps generating at least one weighted output information item that is transmitted to one or more other elementary decoding steps (col. 52, lines 41-48 in Moher teach that each previous decoding stage calculates determines a weight for use by the combining algorithm blocks in Figure 45 which uses the information to calculate new codeword estimates $b_1,\ldots, b_k$, which are distributed to one or more other elementary decoding steps; Note:

new codeword estimates $b_1,\ldots, b_k$ are weighted output information items), the method further comprising a characteristic quantity determination step for calculating at least one characteristic quantity from a set of the weighted output information items generated in at least one of the elementary decoding steps (the log-likelihood ratio $\Lambda_1(x)$ in Figure 21 of Moher is a characteristic quantity determined from the set of the weighted output information items $b_1,\ldots, b_k$), the at least one characteristic quantity including a statistical function associated with the elementary decoding (col. 17, lines 15-30 in Moher teach that the log-likelihood ratio $\Lambda_1(x)$ in Figure 21 of Moher is calculated from a ratio of statistical/probability functions based on the weighted output information items $b_1,\ldots, b_k$), steps and a decoded information quality parameter determination step for determining, from the at least one characteristic quantity and at least one configuration parameter, a decoded information quality parameter associated with a set of decoded information items corresponding to the set of weighted output information items (the second BCJR decoder in Figure 21 provides a decoded information quality parameter determination step for determining, from the at least one characteristic quantity the log-likelihood ratio $\Lambda_1(x)$ in Figure 21 of Moher and at least one configuration parameter u, ζ, a decoded information quality parameter $\Lambda_2(x)$ in Figure 21 of Moher associated with a set of decoded information items $\Lambda_1(x)$ corresponding to the set of weighted output information items $b_1,\ldots, b_k$).
However Moher does not explicitly teach the specific use of a value representing a number of errors.

Wei, in an analogous art, teaches use of a value representing a number of errors (columns 7 and 8 in Wei teach $\det(L_p^{(0)})$ is a value representing a number of errors). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Moher with the teachings of Wei by including use of a value representing a number of errors. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a value representing a number of errors would have provided the opportunity to determine the number of errors left in a data string.

35 U.S.C. 103(a) rejection of claim 2.

The decoded information quality parameter $\Lambda_2(x)$ in Figure 21 of Moher is used after the decoding procedure to determine a new estimate.

35 U.S.C. 103(a) rejection of claim 3.

The decoded information quality parameter $\Lambda_2(x)$ in Figure 21 of Moher is used during the decoding procedure as feedback to the first decoder.

35 U.S.C. 103(a) rejection of claim 4.

Moher teaches each of the elementary decoding steps uses part of the received information, which corresponds to a redundant information item associated with the corresponding elementary coding step (each of the elementary decoding steps in Figure

2 of Moher uses part of the received information, $y_1,\ldots, y_k$, which corresponds to a redundant information item associated with the corresponding elementary coding step), for generating an output information item comprising an extrinsic information item transmitted to one or more other elementary decoding steps, at least one extrinsic information item obtained during one iteration being transmitted to another iteration ($\Lambda_2(x)$ in Figure 21 of Moher is an extrinsic information item obtained during one iteration being transmitted to another iteration transmitted to one or more other elementary decoding steps), and the characteristic quantity determination step includes calculating the at least one characteristic quantity during an elementary decoding step from a set of extrinsic information items at the output of the said elementary decoding step (Figure 21 of Moher teaches calculating the at least one characteristic quantity $\Lambda_1(x)$ during an elementary decoding step from a set of extrinsic information items ($\Lambda_2(x)$ at the output of the said elementary decoding step).

35 U.S.C. 103(a) rejection of claim 6.

Col. 17, lines 15-30 in Moher teach that the characteristic quantity $\Lambda_1(x)$ in Figure 21 of Moher is calculated from a ratio of statistical/probability functions. Probabilities are always positive hence equal to its own absolute value and are associated with an expected value. In a discrete probabilistic system with exactly one outcome, probability is substantially equal to the mean value.

35 U.S.C. 103(a) rejection of claim 7.

Col. 17, lines 15-30 in Moher teach that the characteristic quantity $\Lambda_2(x)$ in Figure 21 of Moher is completely characterized by a ratio of the statistical/probability functions.

35 U.S.C. 103(a) rejection of claim 8.

Moher teaches the decoded information quality parameter determination step determines the decoded information quality parameter $\Lambda_2(x)$ in Figure 21 of Moher from a characteristic quantity $\Lambda_1(x)$ calculated in the characteristic quantity determination step during an elementary decoding step from a set of weighted output information items $b_1,\ldots, b_k$ of the elementary decoding step and other characteristic quantities $\Lambda_1(x)$ calculated during previous elementary decoding steps from sets of weighted output information items $b_1,\ldots, b_k$ corresponding to the set of weighted output information items $b_1,\ldots, b_k$ of the elementary decoding step, and at least one configuration parameter u, ζ, the said decoded information quality parameter $\Lambda_2(x)$ being associated with a set of decoded information items $b_1,\ldots, b_k$ corresponding to the set of weighted output information items $b_1,\ldots, b_k$ of the elementary decoding step.

35 U.S.C. 103(a) rejection of claim 9.

Moher teaches that the decoded information quality parameter determination step determines the decoded information quality parameter $\Lambda_2(x)$ in Figure 21 of Moher from characteristic quantities $\Lambda_1(x)$ calculated during an elementary decoding step corresponding to the last elementary decoding step in the decoding procedure (Note: $\Lambda_1(x)$ is decoded in each iteration including the last one).

35 U.S.C. 103(a) rejection of claim 10.

Moher teaches that the decoded information quality parameter determination step determines the decoded information quality parameter $\Lambda_2(x)$ in Figure 21 of Moher from a single characteristic quantity $\Lambda_1(x)$ calculated during the last elementary decoding step in the decoding procedure (Note: $\Lambda_1(x)$ is decoded in each iteration including the last one).

35 U.S.C. 103(a) rejection of claim 11.

Moher teaches that the decoded information quality parameter includes $\Lambda_2(x)$ in Figure 21 of Moher an integer number representing the probable number of errors which exist in the set of decoded information items (Col. 17, lines 15-30 in Moher teach that the characteristic quantity $\Lambda_1(x)$ in Figure 21 of Moher is calculated from a ratio of probability distribution functions. Probability distribution functions represent the probable number of errors, which exist in the set of decoded information items).

35 U.S.C. 103(a) rejection of claim 12.

Moher teaches that the decoded information quality parameter includes $\Lambda_2(x)$ in Figure 21 of Moher includes a scalar used as a weighting factor (Note: the inverse of a probability in equation 13 of col. 17 in Moher is a scalar).

35 U.S.C. 103(a) rejection of claim 13.

Moher teaches that the decoded information quality parameter includes $\Lambda_2(x)$ in Figure 21 of Moher is a parameter characterizing decoding conditions, hence includes a parameter characterizing decoding conditions.

35 U.S.C. 103(a) rejection of claims 14 and 15.

Moher teaches that the decoded information quality parameter includes $\Lambda_2(x)$ in Figure 21 of Moher is a parameter characterizing transmission conditions, hence includes a parameter characterizing transmission conditions.

35 U.S.C. 103(a) rejection of claims 16 and 24.

Moher teaches that the decoded information quality parameter includes $\Lambda_2(x)$ in Figure 21 of Moher uses a predetermined algorithm allowing calculation of the decoded information quality parameter $\Lambda_2(x)$ as a function of the configuration parameters u, ζ, and one of more of the characteristic quantities $\Lambda_1(x)$.

35 U.S.C. 103(a) rejection of claims 17 and 25.

Moher substantially teaches the claimed invention described in claims 1-4, 6-14 and 16 (as rejected above). In addition, Moher teaches that the decoded information quality parameter includes $\Lambda_2(x)$ in Figure 21 of Moher uses a predetermined algorithm allowing calculation of the decoded information quality parameter $\Lambda_2(x)$ as a function of the configuration parameters u, ζ, and one of more of the characteristic quantities $\Lambda_1(x)$. However Moher does not explicitly teach the specific use of a reference table.

The Examiner asserts that use of a reference table would save space on a circuit required for a calculation unit and would provide the flexibility to change the functional aspects of the calculating unit as all software solutions do.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Moher by including use of a reference table. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a reference table would have provided the opportunity to provide the flexibility to change the functional aspects of the calculating unit as all software solutions do.

35 U.S.C. 103(a) rejection of claim 18.

N=K in Figures 1 and 2 of Moher.

35 U.S.C. 103(a) rejection of claim 19.

Moher teaches that the received information item is processed by means of decoding sequences $y_1,\ldots, y_k$ to provide a set of decoded information items $b_1,\ldots, b_k$ as a sequence of binary information items $b_1,\ldots, b_k$ representing a fraction of a decoding sequence.

35 U.S.C. 103(a) rejection of claim 20.

Moher teaches that Col. 17, lines 15-30 in Moher teach that the characteristic quantity

$\Lambda_1(x)$ in Figure 21 of Moher is calculated from a ratio of statistical/probability functions. Probabilities are always positive hence equal to its own absolute value and are associated with an expected value. In a discrete probabilistic system with exactly one outcome, probability is substantially equal to the mean value.

35 U.S.C. 103(a) rejection of claim 21.

Col. 16, lines 47-49 and col. 17, lines11-14 in Moher teach at least one puncturing step and the decoding procedure comprises at least one corresponding de-puncturing step.

35 U.S.C. 103(a) rejection of claim 22.

Moher teaches a combination of transmission methods using a number of decoding procedures associated with the same coding procedure (see Figures 1 and 2 in Moher), decoded information quality parameters $\Lambda_2(x)$ in Figure 21 of Moher obtained respectively at the end of each of the decoding procedures form weighting factors for the corresponding sets of decoded information items $\Lambda_1(x)$ used to form a weighted combination of the sets, $b_1,\ldots, b_k$.

35 U.S.C. 103(a) rejection of claim 23.

Moher teaches a joint detection step (the two decoders in Figure 21 comprise a joint detection step), the decoded information quality parameter $\Lambda_2(x)$ in Figure 21 of Moher is used as a control parameter of the joint detection step.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joseph D. Torres, PhD
Primary Examiner
Art Unit 2133